AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1-8. (Canceled).

9. (**Currently Amended**): A method for exchanging data between two layers of a network stack in a data transmission system comprising a header compression and/or decompression mechanism located above a network access level, comprising the following steps:

for a transmission of the information from the network access level to [[the]] an application package level, the method includes:[[,]]

generating a first stream of estimated original data at the network access level, and

generating a second stream of quantized additional information at the network access level, and ~~quantized additional information, and~~

transmitting the two streams thereafter to a header ~~compression~~ decompression step which generates packets containing reconstructed data and new packets containing the quantized additional information to be transmitted to the application package level, the new packets being adapted to a transmission over the network stack; and

for a transmission of the information from the application package level to the network access ~~level,~~level, the method includes:

generating a third stream of useful data packets with a compressed header at a header compression level on the basis of the packets including the useful data produced at the application package level,

generating a fourth stream of new ~~and the~~ packets with the compressed

header at the header compression level on the basis of ~~including~~ the additional information produced at the application package level, said new packets being adapted to the transmission over the network stack, and

transmitting the [[two]] third and fourth streams ~~thus sent over the~~ over a transmission channel.

10. (**Currently Amended**): The method as claimed in claim 9, wherein ~~for the transmission of the~~transmitting information ~~flowing~~ from the network access level to the application package level~~, comprising~~ includes the following steps:

differentiating the information originating from the transmission channel or from the channel decoder into a stream of initial packets and a stream of previously quantized additional information,

transmitting [[the]] coded initial packets and the additional information to a header decompression step,

shaping the quantized additional information as a function of the characteristics of [[the]] a protocol stack, and

transmitting the two streams thus obtained to a source coding step.

11. (**Currently Amended**): The method as claimed in claim 9, wherein ~~for the transmission of the~~transmitting information ~~flowing~~ from the network access level to the application package level~~, comprising~~ comprises the following steps:

differentiating the information originating from the transmission channel or from the channel decoder into a stream of initial packets and a stream of previously quantized additional information,

transmitting the coded initial packets and the additional information to a header decompression step,

shaping the quantized additional information as a function of the characteristics of [[the]] a protocol stack, and

transmitting the two streams thus obtained to a source decoding step.

12. (**Currently Amended**): The method as claimed in claim 9, ~~for the transmission of~~ transmitting information ~~flowing~~ from the network access level to the application package level~~, comprising~~ comprises the following steps:

differentiating the packets originating from [[the]] a protocol stack into a stream of initial packets and a stream of additional information packets,

compressing the headers of the initial packets and transmitting them to a channel coding step,

shaping the additional information by extracting some additional information for transmission to the channel coding step, and

transmitting the stream generated by the channel coding for sending to the transmission channel.

13. (**Currently Amended**): The method as claimed in claim 9, wherein ~~for the transmission of~~ transmitting information ~~flowing~~ from the network access level to the application package level~~, comprising~~ comprises the following steps:

differentiating the packets originating from [[the]] a protocol stack into a stream of initial packets and a stream of additional information packets,

compressing the headers of the initial packets and transmitting them to a channel coding step of the access layer,

shaping the additional information by extracting some additional information for transmission to the channel decoding step, and

transmitting the stream generated by the channel coding for sending over the transmission channel.

14. (**Currently Amended**): The method as claimed in claim 9, wherein ~~for the transmission of~~ transmitting information ~~flowing~~ from the network access level to the application package level~~, and it~~ comprises the following steps:

differentiating the packets originating from [[the]] a protocol stack into a stream of initial packets and a stream of additional information packets,

compressing the headers of the initial packets and transmitting them to a channel

coding step,

shaping the packets transporting the additional information quantized by header compression as a function of the characteristics of the protocol stack for transmission to the channel coding step, and

transmitting the streams generated by the channel coding for sending over the transmission channel.

15. (**Currently Amended**): The method as claimed in claim 9, wherein the decompression step ~~consists in~~ comprises differentiating the packets originating from the transmission channel, reconstructing the original packets of data, and transmitting the additional information generated to the channel coder or to the channel decoder.

16. (**Currently Amended**): The method as claimed in claim 9, wherein the decompression step ~~consists in~~ comprises differentiating the packets originating from the transmission channel, reconstructing the original packets of data, generating additional packets containing the additional information and transmitting them to the application package level.

17. (**Currently Amended**): The method as claimed in claim 10, wherein the decompression step includes differentiating the packets originating from the transmission channel, reconstructing the original packets of data, and transmitting the additional information generated to [[the]] a channel coder or to [[the]] a channel decoder.

18. (Previously Presented): The method as claimed in claim 11, wherein the decompression step includes differentiating the packets originating from the transmission channel, reconstructing the original packets of data, transmitting the additional information generated to the channel coder or to the channel decoder.

19. (Previously Presented): The method as claimed in claim 10, wherein the decompression step includes differentiating the packets originating from the transmission channel, reconstructing the original packets of data, generating additional packets containing the additional information and transmitting them to the application package level.

20. (Previously Presented): The method as claimed in claim 11, wherein the decompression step includes differentiating the packets originating from the transmission channel, reconstructing the original packets of data, generating additional packets containing the additional information and transmitting them to the application package level.

21. (Previously Presented): The method as claimed in claim 15, wherein the decompression step includes differentiating the packets originating from the transmission channel, reconstructing the original packets of data, generating additional packets containing the additional information and transmitting them to the application package level.

22. (**Currently Amended**): A method for exchanging data between two layers of a network stack in a data transmission system comprising a header compression and/or decompression mechanism, the method comprising the following steps:

for a transmission of the information from [[the]] an application package level to [[the]] a network access level[[,]] :

generating one stream of useful data packets with a compressed header at a header compression level on the basis of the packets including the useful data produced at the application package level;

generating another stream of new packets with the compressed header at the header compression level on the basis of additional information produced at the application package level, those new packets being adapted to a transmission over the network stack; and

transmitting the two streams thus sent over a transmission level.

~~generating useful data packets with compressed header on the basis of the packets including the useful data and the packets including the additional information and transmitting the two streams thus sent over the transmission channel.~~

23. (**Currently Amended**): The method as claimed in claim 22, wherein ~~for the transmission of the~~transmitting information ~~flowing~~ from the network access level to the application package level~~, comprising~~ comprises ~~at least the following steps~~:

differentiating the information originating from the transmission channel or from the channel decoder into a stream of initial packets and a stream of previously quantized additional information,

transmitting the coded initial packets and the additional information to a header decompression step,

shaping the quantized additional information as a function of the characteristics of the protocol stack, and

transmitting the two streams thus obtained to a source decoding step.

24. (**Currently Amended**): The method as claimed in claim 22, wherein ~~for the transmission of the~~transmitting information ~~flowing~~ from the network access level to the application package level~~, comprising~~ comprises ~~the following steps~~:

differentiating the packets originating from the protocol stack into a stream of initial packets and a stream of additional information packets,

compressing the headers of the initial packets and transmitting them to a channel coding step of the access layer,

shaping the additional information by extracting some additional information for transmission to the channel decoding step, and

transmitting the stream generated by the channel coding for sending over the transmission channel.

25. (**Currently Amended**): The method as claimed in claim 22, wherein ~~the transmission of~~transmitting information ~~flowing~~ from the application package level to the network access level~~, and it~~ comprises at least the following steps:

differentiating the packets originating from the protocol stack into a stream of initial packets and a stream of additional information packets,

compressing the headers of the initial packets and transmitting them to a channel coding step,

shaping the packets transporting the additional information quantized by header compression as a function of the characteristics of the protocol stack for transmission to the channel coding step, and

transmitting the streams generated by the channel coding for sending over the transmission channel.